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JAPANESE TRADE STUDIES

Special Industry Analysis  
No. 26

WOOL AND WOOL MANUFACTURES

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Foreign Economic Administration  
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A-26  
CONTENTS

	Page
Introduction and summary -----	1
Description and uses -----	4
Raw wool -----	4
Government control -----	6
Wool yarn -----	8
Woolens and worsteds:	
Production -----	11
Imports -----	11
Exports -----	14
Hats, caps, etc., or felt -----	17
 Table 1.- Raw wool, including carded and combed. Apparent consumption in Japan, 1928-39 -----	 5
Table 2.- Raw wool other than carded and combed: General imports into Japan, by principal countries, 1928-39 -----	 7
Table 3.- Woolen and worsted yarn: Trade of Japan with Empire and other areas, 1928-39 -----	 9
Table 4.- Woolen and worsted yarn: Japanese exports, by principal country of destination, 1928-39 -----	 10
Table 5.- Wool fabrics: Production in Japan proper, by kinds, 1928-39 -----	 12
Table 6.- Wool fabrics: Summary of production, imports, exports, and consumption in Japan proper, 1928-39 -----	 14
Table 7.- Wool fabrics: Japanese exports, by principal country of destination, 1928-39 -----	 15

Production of wool fabrics until 1936 consisted mainly of wool muslin and light-weight serge for making native clothes. The trend in fashion was toward European clothing, however, and in keeping with this trend the manufacture of serges and woollen cloth was steadily developed.

Like the trade in yarns, the exports of wool fabrics increased rapidly after 1932, and imports declined. In 1937 Japan exported fabrics valued at about 64 million yen (74 million yen in 1939). Exports again were almost entirely to Asiatic areas, with Empire areas receiving about half of the total. Most of the remainder, like the exports of yarns, were shipped to British India and China, although Egypt also was a sizable importer in the years 1934-39.

The import value of raw wool was always in excess of the export value of wool manufactures, so that an adverse trade was particularly great in this industry. The following tabulation shows, in thousands of yen, the average annual value of Japan's trade in each of the products covered in this report in the periods 1928-32 and 1933-37, and the net import balance which the trade in raw wool and wool manufactures created.

(In thousands of yen)				
	1928-32		1933-37	
	Imports	Exports	Imports	Exports
Raw wool	92,200	-	208,354	-
Wool yarn	16,504	1,640	2,028	14,506
Wool fabrics	16,610	9,590	7,670	46,756
Wool-felt hats, etc.	-	1,550	-	5,454
Total	125,314	12,780	218,052	66,716
Import balance	112,534		151,336	

Despite the 5-fold increase in the value of exports of wool manufactures in the latter period compared with the former, placing Japan on a net export basis in wool manufactures, the imports of raw wool increased to such an extent that a greater net debit occurred than formerly.

The large domestic consumption of woollens and more especially worsted fabrics in Japan itself and a modest but growing export trade were the basis of the extensive wool manufacturing industry which existed in Japan. Restriction of Japan's capacity to manufacture woollens and worsteds, at least below a level able to supply domestic demands, would appear unnecessary from an economic or military point of view. The elimination of severe restriction of the industry would tend to reduce world consumption of wool because only a few people in Japan and its Asiatic markets are in an economic position to purchase wool fabrics made at present in any other country but Japan. In the long run the exports from Japan could be replaced by exports of wool manufactures from other nations. The bulk of

A-26

the wool imported into Japan was, however, consumed within the country. Imports of wool manufacture would be required in large quantities for the use of the Japanese were the wool-manufacturing industry severely curtailed or eliminated. The amount of foreign exchange needed to purchase the manufactures would be considerably greater than that required to purchase raw wool for domestic processing.

In the immediate postwar period there will be the greatest accumulation of wool stocks in history. There will not, however, be a supply of wool manufactures sufficient to meet the needs of all countries. A large part of the raw wool stocks will be in Australia; Japan was that country's second best customer. It would seem expedient, therefore, to encourage the manufacture of woollens and worsteds in Japan at least for domestic consumption, and perhaps in the short run, for export. On the other hand, it would be possible to ship large amounts of textile machinery to other far eastern countries from Japan, provided this machinery is intact after the war, so that these areas might gradually absorb the export markets of Japan.

In any case, a large amount of wool, in some stage of manufacture, will be required to supply the Japanese with clothing and other essential goods in the postwar period. As no wool was produced in Japan, the supply of wool for consumption within the country in the prewar period was the difference between imports and exports of raw wool and wool manufactures. For the years 1928-32 and 1933-37, the average annual supply, in thousands of pounds of raw wool, 1/ is estimated to have been as follows:

Form	1928-32			1933-37		
	Imports	Exports	Supply	Imports	Exports	Supply
Raw wool	1/87,389	None	87,389	1/136,385	Negligible	136,385
Yarn	9,478	1,277	8,201	1,217	7,843	-6,626
Woollens and worsteds	8,271	3,821	4,450	3,944	31,972	-28,028
Total	105,138	5,098	100,040	141,546	39,815	101,731

1/ Scoured basis. Raw wool was converted from grease wool on the basis of 60 percent yield. Yarn was converted to a scoured wool equivalent on the basis of 1.2 pounds of wool to make 1 pound of yarn. Cloth was converted to a scoured wool equivalent on the basis of 9 ounces per square yard and 1.5 pounds of wool to make 1 pound of cloth.



4-26

This indicates a requirement of about 100 million pounds of raw wool for domestic consumption in Japan. In recent years, however, large amounts of wool entered into the manufacture of goods for military use. As the amount so used is not known, it is difficult to determine what amount of wool would be needed to meet minimum domestic civilian needs. It is clear that civilian consumption in Japan in 1933-37 must have been far below the level of such consumption in the earlier period, 1928-32. The amount of wool fibers needed would also vary greatly depending on the use made of alternative fibers--such as spun rayon and more especially spun silk--to substitute for domestic needs of wool clothing and other wool goods. The complete elimination of the rayon industry in Japan as a control measure would create an increased need for other fibers.

Imports of 100 million pounds of raw wool (scoured basis) for domestic use would be no greater than in the years 1928-36. It would allow a per capita consumption of about 1.3 pounds compared with a consumption per capita of about 2.2 pounds in the United States in 1939. Imports of 100 million pounds of wool into Japan would, on the basis of unit values in 1933-37, be valued at about 91 million yen, and would be of major importance, by value, as an import into that country.

#### Description and uses

The two chief divisions of wool cloth manufacture are the woollen and the worsted. The differentiation between these is based chiefly on the method of treating the wool fibers during the process of manufacture, especially in the preparation of yarns, since the character of the final product is largely set by the time the wool has been worked into the yarn state.

In the manufacture of woollen yarn the individual wool fibers must be thoroughly intermingled but their arrangement is of secondary importance. This permits utilization of fibers of all lengths. Woollen yarn is especially suited to the manufacture of soft, heavy fabrics such as overcoatings for both civilian and military use.

Worsted yarn is spun from tops. The wool fibers are paralleled and equalized, and the yarn is smooth compared with woollen yarns. Owing to its structure, a worsted yarn does not possess felting properties to the same extent as a woollen. The two systems of manufacturing worsted yarn are the Bradford and the French. Worsted fabrics as a rule are woven much lighter in weight than are woollen. It is this fact that accounts for the large proportion of worsted spindles in the Japanese wool manufacturing industry, as the demand in the home market and for exports is chiefly for light-weight fabrics.

#### Raw wool

Japan proper was almost entirely dependent on foreign sources for raw wool supplies; no wool is produced in Japan proper, and although attempts were made to increase the output of the sheep flocks in Korea and Manchuria (Manchukuo) the direction of the import trade was not materially changed. No wool trade occurred with Formosa.

Until 1937 Australia was the principal source of imports. Japan was a large exporter of rayon and other nonwool fabrics to Australia. When that country placed severe restrictions on these imports in 1936, the Japanese Government ordered purchases of Australian wool reduced by two-thirds. Because it failed to find sufficient wool in South Africa, New Zealand, or South America to meet its military demands, Japan was forced to purchase an additional amount of wool on Australia's own terms. However, imports from Australia fell from 117 million kin in 1936 to 74 million in 1937, whereas imports from the Union of South Africa increased, in the same period, from 15 to 56 million kin. (See table 2.)

In the years just before the war, increased interest was shown in the purchase of crossbred wools on account of their suitability for military purposes. In 1938, under the Export and Import Articles, imports of raw wool declined to 86 million kin and in 1939 to 80 million kin.

#### Government control

Since 1937, the wool industry in Japan has been placed under strict State control. Imports of wool were restricted under the Foreign Exchange Control Law and the manufacture of wool goods for domestic use was curtailed in favor of those for military use and for export. Since October 1937, licenses have been required for the import of wool into Japan. It became apparent early in 1938, however, that the reduction in supplies was adversely affecting the country's export trade in wool fabrics. Therefore, a system of linking imports of wool to exports of manufactured goods was adopted. Under this scheme, exporters of wool manufactures were granted import permits for amounts of wool corresponding to the wool content of their exports.

In October 1937, a Government ordinance decreed that from 20 to 30 percent of staple fiber should be used in all woollen and worsted goods for home consumption, made from imported wool. In July 1938, those percentages were increased to from 50 to 80 percent and goods produced with a smaller proportion of substitutes were forbidden to be sold on the home market.

Wool yarn

Most of the wool yarn produced in Japan is undoubtedly of the worsted type, as the bulk of the fabrics produced are worsteds. The production of wool yarn in Japan more than trebled after 1930, when it amounted to 42 million kin, and increased in 1937 to 149 million kin. The expansion was largely attributed to the increase in foreign demand for Japan's wool products. Technical improvements in the manufacture of woollen and worsted yarns resulted in a high-grade product that could be sold at a profit in foreign markets. Production in 1939 fell to 111 million kin, despite the "China Incident."

Since 1933 Japan has been on a net export basis with respect to wool yarn. Total exports of wool yarn have risen steadily (from 1,640,000 yen annually in the 5-year period 1928-32 to 14,506,000 yen annually in the years 1933-37). In the immediate prewar years the chief markets were British India, China, Brazil, Korea, and Manchuria. Empire areas as a whole received a substantial portion of Japan's exports (54 percent in 1933-37. (See table 4.) The export trade in yarns has, however, always been small in relation to yarn production and the exports of wool fabrics. Average annual imports in the 5-year period 1928-32 amounted to 16,506,000 yen as compared with 2,028,000 yen in the period 1933-37. In recent years Japan's imports of wool yarn were limited to specialized qualities for domestic consumption, almost the whole of which were obtained from the United Kingdom.

A-19

As a result of the plan, net imports in 1933 and 1934 were less than 1 million bushels, and in 1935, exports exceeded imports by about 4 million bushels. <sup>1/</sup> In 1935, the subsidizing part of the plan was abandoned, but the higher tariff and the program of better seed and cultural techniques were continued. The high price of wheat relative to that of the barley was probably the most important factor in increasing sharply the production of wheat.

#### Wartime supply

Reports from various sources show that the production of wheat in Japan during the war has been at about the same high level as in the immediate prewar years when the surplus amounted to between 10 and 15 million bushels. In 1941 production amounted to about 54 million bushels, and in 1944 one source reports that 68 million bushels were produced.

In 1941, the Government began to control the supply of wheat. Various regulations in regard to rationing were announced. Prices on wheat and wheat flour had been fixed in 1940. In 1942 the Government dissolved several of the Grain Corporations and transferred their activities to the Central Food Administrative Corporation. Under this central organization are local groups which handle rationing and distribution of foods. In 1944, the ceiling on wheat was 15 yen per 50 kilograms for the Central Food Management Organization and 16.20 yen (retail sales) for the local Food Management Organization.

Special prices were authorized by the Ministry of Agriculture for unusual results in production and delivery.

#### Postwar problems

Production of wheat in Japan in the postwar period will probably be at least equal to consumption. Because practically all wheat grown in Japan is of the soft type, however, some hard wheat might be imported to blend with the domestic wheats for making flour to be used for bread. Although there is a possibility of expanding production of hard spring wheat in Hokkaido, it is doubtful that sufficient quantity can be produced to equal the amounts consumed in the prewar period. It seems likely that imports amounting to 2 to 4 million bushels would supply the demand for hard wheat. The bulk of these imports might be imported from Canada.

If exports from Japan are prohibited, additional amounts of wheat (probably in the form of flour), or some suitable substitute, from some other source might be needed in Korea, Manchuria, and Kwantung and Formosa. These areas received sizable shipments of wheat flour from Japan.

<sup>1/</sup> Wheat and wheat flour in terms of wheat.



Exports.--The value of Japan's exports of wool fabrics increased steadily from 8.5 million yen in 1928 to a peak of 74 million in 1939. Of the aggregate exports in the 5-year period 1928-32 amounting to 9.6 million yen annually, about 84 percent went to the Empire countries of Korea, Formosa, Manchuria, and Kwantung. In the period 1933-37 annual exports rose to 47 million yen, of which 51 percent was taken by the Empire countries. Exports to other than Empire countries were widely distributed, but the chief markets were British India, China, Egypt, the Union of South Africa, and Asiatic Russia. (See table 7.)

Japan had never been able to produce quality fabrics that could compete with those of Europe and America. No foreign goods, however, could compete with the Japanese low and medium-grade products in the Asiatic and East Indian markets, where price rather than quality was the major competitive factor.

Hats, caps, etc., of felt

Inasmuch as 90 percent of Japan's wool spinning spindles were worsted, there was a large surplus of noils, the major part of which was combed from Australian wool. These noils are preferred in the production of wool-felt hat bodies and hats.

Production data are not available, but exports increased from 245,000 dozen, valued at 2,244,000 yen, in 1928 to 1,675,000 dozen, valued at 8,392,000 yen in 1936. In the period 1933-37 the chief markets, in the order named, were the United States, China, Manchuria, British India, the Netherlands Indies, and Siam.